

## METHOD AND APPARATUS FOR A WIRELESS POWER SUPPLY

This application claims the benefit of Provisional Application No. 60/511,860, filed Oct. 17, 2003.

### FIELD OF THE INVENTION

The present invention is related to the retrieval of radiated electrical energy. More specifically, the present invention is related to the retrieval of radiated electrical energy that is optimized for any given portion of the RF spectrum using a plurality of taps.

### BACKGROUND OF THE INVENTION

In the operation of the invention, ambient RF and generated RF signals provide a source of potential energy that can be gathered, stored and supplied to a multitude of devices requiring electrical energy or that can restore energy lost by a discharged source.

Traditional RF receiving devices utilize an antenna to capture a narrow band of frequencies within the RF spectrum, whereby the collection of RF frequencies is then filtered, or tuned, to a specific frequency(s) for the purposes of maximizing the signal being transmitted within the chosen frequency(s). The potential energy contained in the signal is then used for its intended purpose, such as audio, video or data processing. These RF receiving devices have focused on maximizing selectivity of the frequency in order to isolate and to be coherent without interference from other sources.

### SUMMARY OF THE INVENTION

The present invention pertains to an apparatus for a wireless power supply. The apparatus comprises means for receiving a range of RF radiation across a collection of frequencies. The apparatus comprises means for converting the RF radiation across the collection of frequencies, preferably at a same time into DC.

The present invention pertains to a method for a wireless power supply. The method comprises the steps of receiving a range of RF radiation across a collection of frequencies. There is the step of converting the RF radiation across the collection of frequencies, preferably at a same time into DC.

### BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings, the preferred embodiment of the invention and preferred methods of practicing the invention are illustrated in which:

FIG. 1 is a schematic representation of a preferred embodiment of an apparatus of the present invention.

FIG. 2 is a schematic representation of a preferred embodiment of an apparatus of the present invention optimized for medium wave bandwidth RF energy retrieval, collection and storage.

FIG. 3 is a block diagram of the apparatus of the present invention.

## DETAILED DESCRIPTION

Referring now to the drawings wherein like reference numerals refer to similar or identical parts throughout the several views, and more specifically to FIG. 1 thereof, there is shown an apparatus 10 for a wireless power supply. The apparatus 10 comprises means 12 for receiving a range of RF radiation across a collection of frequencies. The apparatus 10 comprises means 14 for converting the RF radiation across the collection of frequencies, preferably at a same time into DC.

Preferably, the converting means 14 includes an absorbing mechanism 16 which is resonant for a desired band of RF spectrum. The absorbing mechanism 16 preferably includes an inductor 18 which is resonant for the desired band of RF spectrum. Preferably, the converting means 14 includes a plurality of taps 20 placed at points along the inductor 18 to access the RF energy.

The tap points preferably are calculated by matching the inductor's 18 impedance to the desired band of RF spectrum. Preferably, the receiving means 12 includes an antenna 22. The converting means 14 preferably includes a rectifying mechanism 24 which rectifies the RF energy and converts it into DC voltage. Preferably, the rectifying mechanism 24 includes a plurality of diodes 26 at each tap point which rectifies the RF energy and converts it into DC voltage.

The apparatus 10 preferably includes a storage device 28 for storing the DC voltage. Preferably, the antenna 22 impedance is matched 1:1 with the inductor 18 impedance. The RF spectrum preferably is between 60 Hz to 28 gigahertz.

The present invention pertains to a method for a wireless power supply. The method comprises the steps of receiving a range of RF radiation across a collection of frequencies. There is the step of converting the RF radiation across the collection of frequencies, preferably at a same time into DC.

Preferably, the converting step includes the step of absorbing the energy. The absorbing step preferably includes the step of absorbing the energy with an inductor 18. Preferably, the converting step includes the step of accessing the absorbing energy with a plurality of taps 20 on the inductor 18. There is preferably the step of matching the inductor's impedance to a desired RF range.

Preferably, the converting step includes the step of rectifying energy available at each tap and converting it into DC voltages. The rectifying step preferably includes the step of rectifying the energy available at each tap and converting it into DC voltages with diodes 26. Preferably, the converting step includes the step of summing the DC voltages. The summing step preferably includes the step of adding the DC voltages among a series capacitor integrator. Preferably, there is the step of storing the summed DC voltages. There is preferably the step of using the stored DC voltages.

A method and apparatus 10 for retrieval of radiated electrical energy is described herein. The radiated energy to be captured is being transmitted in the portion of the electromagnetic spectrum sometimes referred to as RF, or Radio Frequency. The primary purpose of the method and apparatus 10 described herein, is to receive RF energy and convert the energy into a usable form of power. The method and apparatus 10 does not discern or interpret individual